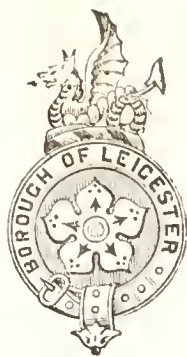


Borough of



Leicester.



ANNUAL REPORT

ON THE

HEALTH AND SANITARY CONDITION
OF THE BOROUGH,

WITH

Yearly Tables of Deaths, &c.,
FOR 1884,


BY

WILLIAM JOHNSTON, M.D.,

MEDICAL OFFICER OF HEALTH.

LEICESTER:

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The Committee meet every Friday, at the Committee Room, Town Hall, at half-past Three o'clock in the Afternoon.

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MEDICAL OFFICER'S REPORT,

1884.

TO THE SANITARY COMMITTEE OF THE COUNCIL
OF THE BOROUGH OF LEICESTER.

MR. CHAIRMAN AND GENTLEMEN,

I have the honour to present to you my Annual Report on the Health and Sanitary Condition of the Borough for the year 1884.

POPULATION.

It will be obvious that for a correct estimate of the birth-rate or death-rate of a community it is essential that its population be first accurately determined.

The populations for 1884 of the twenty-eight large towns, now tabulated in the weekly and quarterly returns of the Registrar General, were the numbers enumerated in April, 1881, raised to the middle of 1884 by the addition of three and a quarter years' increase calculated at the rate that prevailed in the previous decade, 1871-81. Estimated after this manner the population of Leicester was returned as 132,773. Various reasons led me to suspect that this estimate would be found to show a considerable excess over the actual numbers should a special enquiry be made. Upon mentioning the subject to Mr. Allen, Building Inspector, he kindly consented to supply me with a return of the houses which had been built since the census enumeration. The return was as follows :—

RETURN I.

BOROUGH OF LEICESTER. URBAN SANITARY AUTHORITY.

TABLE SHOWING NUMBER OF ADDITIONAL DWELLING HOUSES COMPLETED AND OCCUPIED,
NUMBER OF HOUSES PULLED DOWN, AND

TOTAL NUMBER OF HOUSES FOR EACH YEAR SINCE THE LAST (1881) CENSUS.

Y. E. A. R.	Total Number of Inhabited Houses as per last Return.	Additional Dwelling Houses completed and occupied during the year ending 30th June.	Total Number from which must be deducted the Houses pulled down during the year.	Houses pulled down during the year.	Net Number of Inhabited Houses within the Borough on 30th June in each year.	Number of Uninhabited Houses taken at last Census.	Total Number of Inhabited and Uninhabited Houses within the Borough on 30th June.
1881 Census					24,974	946	25,920
1882, 30th June	24,974	570	25,544	33	25,511	946	26,457
1883 ,	25,511	349	25,860	42	25,818	946	26,764
1884 ..	25,818	175	25,993	56	25,937	946	26,883

RETURN II.

BOROUGH OF LEICESTER. URBAN SANITARY AUTHORITY.

Statement shewing INCREASE OR DECREASE of DWELLING HOUSES since June 30th, 1883, and the Total Number of Inhabited and Uninhabited Houses within the Borough up to 30th June, 1884.

	WARD DISTRICTS.							Total.
	No. 1. St. Martin's.	No. 2. N. Margaret's.	No. 3. M. Margaret's.	No. 4. E. Margaret's.	No. 5. E. Mary's.	No. 6. W. Mary's.	No. 7. All Saints.	
Dwelling houses for which Plans were approved prior to June 30th, 1883, and in various stages of construction at that date but since COMPLETED AND OCCUPIED	2	7	15	82	7	6	5	
Dwelling houses for which Plans have been approved since June 30th, and now (June 30th, 1884) COMPLETED AND OCCUPIED		22	17	3	1	4	4	
Total New Houses COMPLETED AND OCCUPIED since June 30th, 1884	2	29	32	85	8	10	9	175
DEDUCT Houses PULLED DOWN since June 30th, 1883, and up to June 30th, 1884	3	2	30		6	11	1	56
Net INCREASE of Dwelling Houses completed and occupied since 30th June, 1883, and up to 30th June, 1884		27	2	85	2		8	124
DECREASE ditto	1					4	5	119
Total Number of Inhabited Houses as per Return to Medical Officer of Health, DATED 30th JUNE, 1883, based upon the return of Inhabited Houses at the last Census	422	2796	6875	6007	1923	4828	2967	25818
Total Number of INHABITED HOUSES in the Borough based upon the Return of Inhabited Houses at the last Census and the Yearly Increase of Houses completed and occupied since that date and up to June 30th, 1884	421	2823	6877	6092	1925	4824	2975	25937
Add "946 Houses UNINHABITED," see Census 1881	16	68	277	292	51	127	112	946
TOTAL NUMBER OF HOUSES INHABITED AND UNINHABITED, 30th June, 1884	437	2891	7154	6384	1976	4951	3087	26883

The total number of inhabited and uninhabited houses for each year given in column 7 of Table I. was arrived at by assuming that the uninhabited houses in the Borough remained the same, *i.e.*, 946, as at the time of the census. A more detailed statement, with which Mr. Allen also supplied me, shows the ward distribution of the total number of inhabited and uninhabited houses within the Borough on 30th June, 1884 (*vide* page 7).

The information contained in these two Tables offered strong proof that the population had been over-estimated. I communicated with the Registrar General and enclosed him a copy of the first Table. His reply to my letter conveyed a request for a return shewing the numbers of inhabited houses on the rate books of the Borough at the middle of each of the four years, 1881-82-83 and '84. The Sanitary Committee accordingly authorized the Town Clerk to procure this special return of inhabited houses.

The following reply was received from the Registrar General after his perusal of the figures in the Overseer's Return.

"SIR,

"I am desired by the Registrar General to acknowledge the receipt of your letter of 23rd inst., and to thank you for the information it contains of the number of inhabited houses on the Rate books of the Borough in each of the last four years.

"A careful consideration of the full bearing of this information certainly supports the probability that the Registrar General's estimate of the present population of Leicester (based upon the hypothesis that the rate of increase since 1881 has been maintained at the same rate that prevailed during the last inter-censal period, 1871-81) somewhat exceeds the true number. It appears that if the rate of increase of inhabited houses on the Rate books that prevailed during the three years, 1881-84, were to be accepted as fairly representing the rate of increase of population (an hypothesis open to some objection), it would make the estimate for the middle of 1884, 127,929 instead of 132,773, the estimate by the more usual method, which would thus shew an excess of 3.8 per cent. If the lower estimate be nearer the correct figure, which in view of the recent and present commercial depression is not impossible, the death rate in the Borough during last year would

be raised from 22.1 to 22.9 per 1000. Bearing in mind that any method of estimate for the population of towns in inter-censal years can only give approximate results, open to more or less objection and doubt, I am desirous to inform you that the Registrar General does not consider the amount of variation between the results of the two methods of estimating the present population of Leicester sufficient to justify him in at present departing from his usual method (which has not yet been departed from) in framing estimates for any of the 28 large towns dealt with in his weekly Return. When, however, toward the close of the year he is called upon to make new estimates for the middle of 1886, he will be willing to reconsider the matter, with the assistance of any fresh information with which you may be able to favour him as to the increase of inhabited houses to the middle of this year. It must be remembered that any revival of trade will probably give an immediate impetus to the growth of our large towns, which might soon rectify any possible under-estimate of the present population.

I am, Sir,

Your obedient Servant,

W. OGLE,

Superintendent of Statistical Department."

From a careful study of the figures in the preceding Tables shewing the number of inhabited houses in the town there can be very little doubt, whatever objection may attach to it, that the revised estimate of the population for the middle of 1884, viz.: 127,929, is a much closer approximation to the actual number than the figures now employed by the Registrar General as a basis for the calculation of our mortality rates. It may still be in the recollection of some that throughout the first quarter of 1881 or prior to the census enumeration, the population of Leicester estimated to the middle of that year was stated in the weekly Returns of the Registrar General to be equal to 134,350. The actual population in the town on the 31st March, 1881, as ascertained by the census was found to be only 122,376, and in the official Return for the week ending 28th May, 1881, wherein were first issued the corrected estimates of the large urban populations, the population of Leicester was set down at 123,120. In other words the

population for 1881, estimated prior to the census by the usual method shewed an excess over the actual number of no less than 11,230. The revised population for last year when compared with the estimated number shews that an exactly similar error was being committed, and had the estimated number not been subjected to correction the next census would have revealed a much wider departure from the actual population than had been noted in any of the previous census periods. Should the Sanitary authorities of the other 27 large towns specially notified by the Registrar General institute enquiries similar to our own to gain a more accurate knowledge as to their respective populations, there can be no doubt that discrepancies of a like nature would be found to exist. Certainly until some such enquiry be entered into by them their death-rates cannot, in justice to those who have already carried out such investigation, either be accepted as truthful or be fairly brought into use for the purposes of comparative information.

OVERSEER'S RETURN.

NUMBER OF INHABITED AND UNINHABITED HOUSES WITHIN THE BOROUGH OF LEICESTER ON THE
1st JULY, 1881, 1882, 1883 AND 1884.

PARISH OR TOWNSHIP.	1881.		1882.		1883.		1884.	
	Inhabited.	Uninhabited.	Inhabited.	Uninhabited.	Inhabited.	Uninhabited.	Inhabited.	Uninhabited.
St. Margaret	16565	503	17020	450	17233	432	17484	351
St. Mary	5237	156	5252	139	5255	173	5306	120
St. Martin	395	21	402	14	401	15	388	23
St. Leonard	562	36	583	17	589	14	598	6
St. Nicholas	374	8	368	4	379	6	385	3
Black Friars	458	6	478	2	482	4	483	2
Augustine Friars	22	...	22	...	21	1	22	...
The Newark	353	2	355	...	355	...	352	3
The Castle View	30	1	31	...	31	...	31	...
All Saints	1473	16	1477	13	1485	9	1485	9
	25469	749	25988	639	26231	654	26534	517

BIRTHS.

The number of births registered during last year amounted to 4851, and shewed an increase of 28 on the number returned in 1883. Of the 4851 births, 2483 were males and 2368 females. For comparative information the quarterly returns of births since the year 1880 are given below.

QUARTERLY RETURNS OF BIRTHS FOR THE FIVE YEARS, 1880-84.

1880.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total for the Year
Males ...	607	653	640	535	2435
Females	628	598	614	585	2425
Total ...	1235	1251	1254	1120	4860
1881.					
Males ...	639	582	594	544	2359
Females	632	619	554	547	2352
Total ...	1271	1201	1148	1091	4711
1882.					
Males ...	631	614	606	607	2458
Females	620	605	605	567	2397
Total ...	1251	1219	1211	1174	4855
1883.					
Males ...	625	636	584	586	2431
Females	657	620	545	570	2392
Total ...	1282	1256	1129	1156	4823
1884.					
Males ...	620	613	648	602	2483
Females	604	603	581	580	2368
Total ...	1224	1216	1229	1182	4851

3305 of the total births recorded in the year under notice were registered in the sub-district of St. Margaret's, and 1546 in that of West Leicester. The birth rate for 1884 was equal to 37.9 per 1000, against 37.0 per 1000 in 1882, and 39.3 the annual average for the ten preceding years.

The figures in the above statement shew that notwithstanding the rise in population, no increase, practically speaking has taken place in the number of births during the five years, 1880-84. An explanation of this is no doubt to be found in the continued stagnancy of trade which, in common with most other large manufacturing centres throughout the country, has affected Leicester throughout this interval of time.

DEATHS.

During the year 1884 the total deaths registered in the Borough amounted to 2969. From this number must be deducted 78 deaths that took place during the year in the County Asylum and the Infirmary of patients who had, previous to admission, resided in the County. To the remaining 2891 must be added 28 deaths that occurred in the Borough Asylum and 18 in the Borough Fever Hospital, making the corrected total deaths equal to 2937. This number is 453 in excess of the deaths recorded in 1883, and 305 above the average for the ten preceding years (1874-83). The marked increase in the deaths of last year on the number returned in 1883 was distributed among the several classes of diseases in the following manner: by far the greatest bulk of the increase arose from Zymotic causes, the deaths from which were no less than 243 more numerous than in the previous year; in the Local diseases there was an increase of 121; next followed Constitutional and Developmental diseases, and here the increase was in each class equal to 40, and lastly, the deaths from violence were more numerous by 16.

On only one occasion in the ten preceding years has the death roll been greater than in last year: this was in 1880, when the total deaths amounted to 2993.

The excess of births over deaths last year, representing the natural increase to the population, was 1914, which shows a decline of 389 on the accession thus received in 1883, and of 230 on the average accession in the four years, 1880-83. The 2969 deaths recorded in the Borough last year included 1615 of children under five years, and of these no fewer than 1133 were infants under one year of age. In

other words, the deaths of children under one year of age amounted to 38·16 per cent. of the total deaths, and no less than 54·39 per cent. of the deaths were of children under five years.

The annual death-rate for 1884 was equal to 22·9 per 1000, against 19·2 per 1000 for the previous year, and 23·3, the average rate for the eight years, 1875-82. When compared with the death-rates of other Boroughs, our rate last year shewed an excess of 0·8 per 1000 over the average rate for the twenty large towns and, bracketed with Nottingham, Leicester occupied twelfth place on the list in the order of healthiness. From the facts which I have previously stated in this Report concerning the large error which had crept into the Registrar General's estimates of our population it will be clear that the estimated rates of Leicester given for previous years, with the exception of that for 1881, are lower than the mortality actually experienced, seeing that the deaths in each year were computed upon a population of a uniformly too high figure.

On glancing over the populations accredited to the twenty large towns tabulated in the first quarterly Report of the Registrar General for the year 1881, and comparing them with the populations given in his second quarterly Report for the same year (when he was enabled by the aid of the Census Returns to correct any discrepancies) I find that the corrected populations were in nearly every instance considerably in excess of the estimated numbers. Now it cannot be doubted that should enquiries be instituted by the authorities of other large towns to ascertain as nearly as possible their actual populations, errors would be discovered similar to the case of Leicester, *i.e.*, their estimated populations would be found to shew a considerable excess. Looking to this fact it will be manifest that the rates for 1884 given in Table I. for the 19 large towns wear a more favourable aspect than actually belongs to them, and they cannot in strict fairness be used as standards for judging as to the salubrity of our own town. The manner in which the 2969 deaths registered last year were distributed over the several quarterly periods was as follows:—623 deaths occurred in the first quarter, 583 in the second, 942 in the third, and 821 in the fourth. The large increase to be observed in the return of deaths for the third quarter was mainly due to an exceptional diarrhoeal fatality in conjunction with a greatly increased number of deaths from Atrophy.

No fewer than 314 persons died during the three months from diarrhoea, while 113 children sank from atrophic diseases. The deaths in the fourth quarter were also considerably in excess of the average number. This was largely owing to an increase in the fatality from Measles which during this period gained an epidemic prevalence: the deaths from Measles were at the same time largely supplemented by an unusual number of fatal cases happening from affections of the Respiratory Organs.

DEATHS CLASSIFIED, RATES OF MORTALITY AND PERCENTAGE OF
TOTAL DEATHS IN 1884.

Class of Disease.	Deaths.	Death-Rate.	% of Total Deaths.
1.—Zymotic Diseases ...	640*	5.00	21.43
2.—Constitutional ...	377	2.95	12.62
3.—Local ...	1302	10.18	43.59
4.—Developmental ...	565	4.42	18.91
5.—Violence ...	79	.62	2.64
6.—Ill-defined ...	24	.19	.80

The following is the corresponding return for 1883 :—

Class of Disease.	Deaths.	Death-Rate.	% of Total Deaths.
1.—Zymotic Diseases ...	397*	3.06	15.68
2.—Constitutional ...	337	2.60	13.31
3.—Local ...	1181	9.12	46.65
4.—Developmental ...	525	4.05	20.71
5.—Violence ...	63	.49	2.49
6.—Ill-defined ...	26	.20	1.03

* These figures include the deaths which occurred in the Borough Fever Hospital.

TABLE I.

ANNUAL RATES OF MORTALITY IN TWENTY GREAT TOWNS, FOR THE
YEARS 1875-82, 1883 AND 1884.

BOROUGHES.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	Mean of the 3 years	1883	1884
Average Rate ...	25.1	23.5	22.7	24.2	23.2	22.7	21.7	22.3	23.2	21.8	22.1
London ...	23.5	22.0	21.5	23.0	22.7	21.6	21.2	21.4	22.1	20.4	20.4
Brighton ...	22.4	19.7	18.8	21.3	19.1	19.8	19.0	21.7	20.2	19.2	17.9
Portsmouth ...	20.1	22.8	18.0	19.9	17.6	19.8	19.7	21.5	19.9	18.6	19.4
Norwich ..	24.4	21.7	20.7	24.3	21.7	24.3	19.5	20.6	22.1	19.6	21.2
Plymouth ...	20.9	22.4	22.0	25.8	22.9	35.1	19.9	21.2	22.5	20.9	21.1
Bristol ..	27.4	23.1	22.5	22.2	21.9	21.0	19.6	19.2	22.1	17.9	18.4
Wolverhampton	25.0	24.0	24.4	23.5	23.0	21.3	21.2	22.4	23.1	21.3	23.4
Birmingham ...	26.6	22.7	24.1	25.5	22.1	20.7	20.0	20.9	22.8	21.3	21.4
Leicester ...	27.7	24.1	22.6	22.1	23.2	25.0	21.8	20.0	23.3	19.2	22.9
Nottingham ...	26.1	21.9	21.1	20.1	21.6	23.8	22.4	23.6	22.5	21.2	22.9
Liverpool ...	27.5	27.5	26.3	29.2	26.9	27.1	26.7	26.5	27.2	26.7	25.2
Manchester ...	30.9	30.2	28.5	29.2	28.3	26.9	25.5	26.7	28.2	27.6	26.4
Salford ...	29.7	29.6	26.4	27.1	26.7	28.0	22.6	23.2	26.6	22.4	22.3
Oldham ...	27.9	26.9	25.1	27.0	22.8	24.7	22.8	24.6	25.2	22.0	24.5
Bradford ...	28.3	25.2	23.3	24.1	22.9	22.9	19.7	21.2	23.4	18.4	20.1
Leeds ...	27.0	25.8	23.0	24.7	23.5	22.0	21.6	23.2	23.8	23.3	24.2
Sheffield ...	25.8	25.5	23.1	26.6	22.9	22.9	21.1	21.7	23.7	22.9	22.4
Hull ...	27.3	22.8	21.5	24.1	22.0	23.4	23.8	23.2	23.5	22.8	21.1
Sunderland ...	22.7	21.2	22.9	25.9	22.3	25.0	20.9	26.5	24.4	24.5	23.0
Newcastle ...	26.6	23.3	23.0	24.5	24.4	22.8	21.8	23.1	23.7	25.4	23.1

INFANT MORTALITY.

Last year the rate of infant mortality, measured by the proportion of deaths under one year of age to births registered, was equal to 233 per 1000, against 190 per 1000 in 1883, and 205, the annual average in the ten preceding years. The infant death-rate last year assumed higher proportions than in any of the eight previous years. When compared with the corresponding returns for the nineteen other large towns (Table 2), the infant mortality rate for Leicester will be seen to be the highest. If we review the figures marking the rates for the quarterly periods of the year, it will be obvious that the unsatisfactory position of the Leicester yearly average was chiefly dependent upon the conspicuously high rate recorded for the third or summer quarter. The excessive fatality among infants during this quarter resulted for the most part from Diarrhœa and Atrophic Diseases.

The question as to the causes of the high infant mortality in Leicester is one that has for a considerable time engaged the attention of its Health Committee and, I may add, has formed a matter of grave and abiding solicitude to myself as Health Officer of the Borough. The continued persistence of this high comparative fatality among infants recurring, as it now has done, annually through a long series of years without any evidence of substantial amelioration, the unusually high rate recorded last year, and the evil repute which such a record will inevitably bring upon the town and those responsible for its welfare, all combine to invest an enquiry into the nature of the agencies so especially destructive of life with a degree of importance far exceeding that which attaches to any other at present requiring the attention of the Health Authorities. Another circumstance which adds still further weight to this subject may with advantage be here briefly brought under notice. The 1133 deaths of infants registered last year were distributed over the quarterly periods in the following manner: 191 deaths occurred in the first quarter, 169 in the second, 513 in the third, and 260 in the fourth. The fluctuations in the above figures are highly significant when we compare them with the quarterly returns of the *gross* deaths previously given. A striking parallelism exists in the rise and fall of the figures in both lists, which points to

TABLE II.

RATES OF INFANT MORTALITY IN THE 20 LARGE TOWNS
DURING 1884.

TOWNS.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	For the Year 1884.
London ...	135	131	223	136	156
Brighton ...	151	82	227	125	146
Portsmouth ...	87	119	201	107	129
Norwich ...	127	119	333	181	190
Bristol ...	144	115	161	153	142
Wolverhampton	130	163	282	188	191
Birmingham ...	131	140	259	170	175
Leicester ...	156	139	417	220	233
Nottingham ...	152	151	302	186	198
Liverpool ...	144	160	287	190	195
Manchester ...	173	162	231	169	184
Salford ...	159	149	281	156	186
Oldham ...	186	175	195	175	183
Bradford ...	146	145	234	198	181
Leeds	131	162	286	163	185
Sheffield ...	150	117	253	167	172
Hull	126	114	263	172	169
Sunderland ...	114	131	256	171	168
Newcastle ...	150	114	203	156	156
Plymouth ...	119	163	185	136	151

the fact that the character of the gross death-rates for Leicester is regulated in great measure by the rate of its infant mortality. This fact is rendered clearer by the figures in the annexed table :

QUARTERLY RETURNS FOR 1884.

DEATHS OF INFANTS UNDER ONE YEAR.

DEATHS FROM ALL CAUSES AT ALL AGES.

DEATHS OF CHILDREN OVER A YEAR, AND OF ADULTS.

1884.	Deaths of Infants.	Deaths at all ages.	Deaths of Children over one year and of Adults.	Gross death rate per 1000.	Death rate for all ages over one year.
1st Quarter ...	191	623	432	19.5	13.5
2nd Quarter ...	169	583	414	18.2	12.9
3rd Quarter ...	513	942	429	29.4	13.4
4th Quarter ...	260	821	561	25.7	17.5
	Col. 1.	Col. 2.	Col. 3.	Col. 4.	Col. 5.

The numbers in Col. 3 are obtained by deducting the figures in Col. 1 from those in Col. 2. The rise in the deaths for the fourth quarter shewn in Col. 3 was, as I shall hereafter explain, mainly owing to the fatality which arose from a visitation of Measles.

The above considerations have caused me, at this early stage of my Report, to introduce and deal with the question of the causes of Infant Mortality.

In Table 3, I have shewn the number of fatal cases in 1884, returned under ten of the more important diseases of infancy and the rates are also given below the deaths from the respective causes. The deaths from these ten causes amounted in all to 1040, and the disorders which caused the most numerous deaths among infants were, Diarrhoea and Atrophy (wasting). Next follow in the order of fatality Convulsions, Respiratory diseases, Premature Birth, Tubercular diseases, Whooping

TABLE III.

PROPORTIONAL MORTALITY OF CHILDREN UNDER ONE YEAR OF AGE,
FROM DIFFERENT CAUSES, TO 1000 BIRTHS, IN LEICESTER DURING 1884.

(a.) The Deaths of Children under one year of age.

(b.) Rate of Mortality to 1000 Births.

1884.	All Causes.	Measles.	Scarlet Fever.	Whooping Cough.	Diarrhoea.	Lung Diseases.	Atrophy and Debility.	Premature Birth.	Teething.	Convulsions.	Tubercular Diseases.	The preceding 10 causes.
Deaths ...	1133	14	4	28	276	136	243	75	10	215	39	1040
Mortality.	233	2.9	0.8	5.8	56.9	28.0	50.1	15.5	2.1	44.3	8.0	214.4

Cough, Measles, and Scarlet Fever. I purpose dealing with these maladies according to the importance which the figures in the Table have attached to them.

DIARRHŒA.

During last summer quarter the weather proved most favourable to diarrhœal causation; there were long spells of dry weather accompanied with high degrees of summer heat. Following closely in the wake of these favouring weather conditions Diarrhœa soon gained considerable prevalence in all the low lying areas, in face of which the Sanitary Committee determined, as in previous years, to supply gratuitously diarrhœa Mixture to those who applied for it. The medicine was to be obtained at five different stations in the town; its distribution began on the 9th July, and was carried on until September 29th.

To procure as much information as possible in regard to the cases stricken with the complaint, books were provided to register their

address, exact age, and occupation, and enquiry was also to be made of each applicant as to the number of persons affected in the house.

The following is a summary of the information thus obtained as to the number of persons who were affected with Diarrhœa during the period of twelve weeks :—

Stations of distribution.				Persons affected.	
1.—Woodboy Street Police Station	...	...	...	4137	
2.—70, Stanley Street	...	...	...	1324	
3.—Sanvey Gate Police Station	...	...	...	2972	
4.—13, Mowbray Street	...	...	...	741	
5.—Town Hall	...	...	...	1718	
					<hr/>
					10,892 persons.

A reference to the books will also show that in numerous houses the disease attacked several members of the family, and further enquiry showed that these people were either seized simultaneously or sickened in rapid succession. I have analysed the ages registered in one of the books, of the persons attacked with Diarrhœa during last summer, and the results give a fair idea as to its proportional prevalence among persons at different ages. Thus out of a total of 1228 seizures, 932 were persons whose ages ranged from five to sixty years and upwards, 202 were children from one to five years, and only 94 were infants under one year.

In any endeavour to discover the occasioning causes of this annual scourge great weight must in my opinion be attached to the fact (which these records of ages and my own observations both show) that the disease in its progress over the town affected simultaneously persons of every age. Among the sufferers were to be found, indiscriminately mixed, infants and children of school age of every constitutional phase, adolescents, men and women in the prime of life as well as persons of more advanced years. Although all ages were thus attacked with the malady, the fatal cases were as usual met with almost exclusively among the very young and the old, *i.e.*, among those sections of the people where stamina was either not yet fully acquired or had declined.

I pointed out some years ago that in the great majority of infantile cases of Diarrhœa, the disease was accompanied with a marked febrile condition of body. Chest symptoms of a catarrhal nature were also

very common, simulating Bronchitis and Pneumonia. On several of the fatal cases I was allowed to make an after-death examination, and this I always carried out at the earliest possible moment. My attention on these occasions was chiefly directed to the state of the membrane of the alimentary canal. The membrane of the small bowel, more especially in its lower portion, was invariably found in a damaged condition, owing to the frequent presence of irregular patches of inflammation which must during life-time have most seriously interfered with the processes of assimilation and nutrition.

It will be necessary for me here to describe the symptoms commonly observed in a severe case of summer Diarrhœa affecting an infant.

A child, healthy or otherwise, first becomes peevish, irritable, and feverish, and his sleep is disturbed. The bowels are slightly loose and the motions more offensive than usual. He may be sick several times during the day and night, and the vomited matters have always a sour and disagreeable smell. In a day or two all these symptoms become more pronounced, the patient becomes extremely irritable and resents every attention which disturbs him; he has frequent fits of crying and is highly feverish. The actions of the bowels become much more frequent, so that it is next to impossible to keep the patient clean; the motions are variable in colour but uniformly of a most offensive character. The sickness becomes more frequent, nearly all the nourishment given being shortly afterwards vomited. Thirst now becomes extreme, and the little sufferer drinks freely when water is given him. The flesh, at first flabby, is rapidly lost, the face and extremities shrivel, and the fontanelle or opening in the head sinks in. The prostration which ensues from a continuance of these symptoms is extreme in degree, listlessness soon takes the place of irritability, the sharp crying is no longer heard, but the child now moans almost continually. The purging in no way abates in frequency, and the stools still preserve their offensive character. If the case prove fatal, the child either dies from sheer exhaustion or he is seized with a convulsive fit which carries him off. If the case is to recover, the first sign of improvement is that the motions become less offensive in character; this is soon followed by their occurring less frequently and gaining more consistency. The fever, which was more or less persistent throughout, now shews evidence of decline. More food is retained

on the stomach, the moaning gradually ceases and the child begins to take more notice of surrounding objects. His sleep is less disturbed and more prolonged, and with continued improvement in the symptoms the emaciation is gradually recovered from.

The duration of an attack of Diarrhœa is very variable. In the case of strong healthy children the disease may not extend over two or three days, but many of the recoveries remain in a critical condition for as many weeks, and if the constitution be originally defective or tainted, the convalescence may occupy months. Where the vital powers have been much shattered and the recovery is in consequence much protracted, the child frequently becomes the subject of some intercurrent disorder under which he finally succumbs.

Very few of the children in Leicester, and particularly of those living in the lower lying districts of the town, reach the age of twelve months without being attacked with the complaint in some form or other, while every year hundreds of cases ending in recovery are to be found who have passed through ordeals of diarrhœal sickness somewhat similar to that which I have just described. My additional experiences of the disease, gained during last summer, have served only to strengthen me in the conviction already well known that, "Diarrhœa, as it affects both adults and infants during the summer months, depends in the majority of instances upon the introduction into the system by means of air or in food, of living organic ferments derived from the putrefactive decomposition of animal refuse matter," retained in many of the town sewers and present also through soakage in the adjacent subsoil.

ATROPHIC, OR WASTING DISEASES.

Under this category are included the deaths returned under Atrophy, Marasmus, Debility, Congenital Debility, and Asthenia. The feature most common in these affections is emaciation of the body. A reference to the figures in Table 3 will show that no fewer than 243 of the infant deaths last year were referred to the above causes. The distribution of these deaths over the quarterly periods was as follows: 44 deaths were registered in the first quarter, 38 in the second, 96 in the third, and 65 in the fourth. The highest fatality was therefore recorded in the third and fourth quarters.

The growth and development of the body being extremely rapid during infancy, for these to be maintained at their natural rate it is essential that nutrition should receive no check. The very foundation of healthy nutrition rests upon the proper performance of the processes of digestion and assimilation, and where these are imperfectly performed for any lengthened period, a healthy-born child is thereby frequently prevented from attaining its full development, and is deprived at the same time of much of its original constitutional vigour. Furthermore in the case of those infants who inherit depraved constitutions, the parents being either of a scrofulous or phthisical habit, lengthened disturbances of digestion debilitate their systems to the last degree and render them susceptible to every ill that may prevail. And it may here be remarked that now-a-days the number of such congenitally weak children to be found in every large community is by no means insignificant. In town populations especially, many cases of wasting diseases and numerous deaths among infants result from improper feeding, want of cleanliness, bad ventilation, and "neglect" generally, and some sanitarians have recently endeavoured to account for the excess of infant mortality in Leicester by assuming that here less care and attention are bestowed upon the young than elsewhere. I cannot in any way support such an assumption. I have now been nine years engaged in active practice in the town, and have closely observed the way in which mothers bring up their children, and although I have found much ignorance prevailing as to the best methods of infant alimentation, &c., I have never been able to discover evidences of ignorance and "neglect" beyond what are ordinarily to be observed in other manufacturing centres. On the other hand I have observed that in Leicester autumnal diarrhœa annually gains a wider prevalence and gives rise to a higher fatality than in other large towns. Remembering the description I have elsewhere given of the symptoms accompanying an attack of this disease, and bearing in mind the fact that in many of these diarrhœal cases the processes of digestion and assimilation must for a variable period either be completely suspended or at least be profoundly interfered with, it cannot surprise us that the list of deaths in Leicester from Atrophic diseases is annually considerably in excess of other towns.

CONVULSIONS.

Last year the infantile deaths referred to this cause amounted to 215, the rate of mortality being therefore equal to 44·3 per 1000 births registered. If reference be made to the figures in Table 3, it will be seen that the number of deaths included under Convulsions and the diseases already discussed are greatly in excess of those given under any other of the diseases mentioned in the list, and undoubtedly the highly unfavourable position the town occupied last year among other Boroughs for infant mortality was chiefly owing to the fatal prevalence of these diseases alone. In dealing with the causes which contribute to a high fatality from convulsions I cannot do better than quote the remarks made by Dr. Bri-towe on the subject of "Infantile Convulsions" in his well-known work on the Practice of Medicine. He says :

"Convulsions arise in young children, especially during the time of teething, with remarkable readiness and frequency; and indeed, Dr. West observes, that convulsions in children seem often to take the place of delirium, or rigors, in adults. *It is certain that they are often developed in the course of diarrhoea and other disorders of the gastrointestinal tract; that they occur in bronchitis and other affections of the respiratory apparatus; that they come on not only at the period of invasion of scarlet fever and other like diseases, but that they may be induced in the course of these disorders by various accidental circumstances; that they often depend on mere immaturity or anæmia; that they are common in rickety children; and that they are peculiarly liable to occur in connection with the irritation of teething.*"

The experiences of medical practitioners throughout the country fully harmonise with the list of causes of convulsions referred to in the above extract and, for my own part, I am convinced that the excess usually observed in the deaths of infants from convulsions in Leicester over the numbers returned from other towns depends upon the loss and injury which the vital powers of its infantile population annually sustain through the excessive prevalence of diarrhoea in the summer months.

Compared with what is commonly observed in other towns, the mortality from the remaining infantile disorders does not show any

excess ; it will therefore not be requisite for me to devote time to their special consideration.

The subject has however been already sufficiently sifted to show that the causes, both immediate and remote, of the conspicuously high infant mortality of Leicester are to be found in the unhealthy atmospheric conditions annually met with during the summer months.

It will also be obvious that, independently of their directly fatal effects, these self-same conditions must contribute in no small degree to the deterioration of the constitutions of many children who survive their influence.



TABLE IV.

SHOWING THE ANNUAL BIRTH RATE, RATE OF MORTALITY AND DEATH RATES AMONG CHILDREN,
FROM 1874 TO 1884, INCLUSIVE.

Year.	Birth Rate per 1000 of the population.	Annual Rate of Mortality per 1000 living.	Deaths of Children under one year: per centage of Total Deaths.	Per centage of Deaths of Children under one year to Registered Births.	Deaths of Children under five years: Per centage of Total Deaths.
1874	41.195	23.992	38.226	22.262	49.17
1875	38.378	26.026	35.686	24.201	55.48
1876	42.093	22.521	37.372	19.995	54.73
1877	40.464	21.411	35.666	18.872	49.86
1878	39.876	20.728	39.240	20.520	54.80
1879	37.310	21.103	33.119	18.732	51.30
1880	40.390	24.70	36.038	22.016	58.16
1881	38.263	21.56	36.322	20.483	51.77
1882	38.443	20.05	37.264	19.443	51.31
1883	37.0	19.2	36.75	19.07	51.16
1884	37.9	22.9	38.161	23.35	54.39

TABLE V.

SHOWING THE POPULATION, INHABITED HOUSES, BIRTHS, DEATHS
AND MARRIAGES FOR THE YEARS 1873 TO 1884 INCLUSIVE.

GROSS NUMBERS.

Year.	Population Estimated at the Middle of the year.	No. of Inhabited Houses in District.	Births.	Deaths,	Marriages.
1873	102,515	20,020	4452	2478	1209
1874	106,202	21,513	4375	2548	1080
1875	111,000	22,193	4260	2889	1186
1876	113,581	22,848	4781	2558	1230
1877	117,462	23,695	4753	2515	1183
1878	119,845	24,438	4779	2500	1107
*1879	117,610	...	4687	2651	1141
1880	120,325	...	4860	2960	1179
1881	123,120	...	4711	2654	1153
1882	...	25,511	4855	5228	1201
1883	...	25,818	4823	2484	1207
1884	127,929	25,937	4851	2937	

a. Population at Census, 1881, 122,376.

b. Area in Acres, 3030.

c. Number of Inhabited Houses at Census, 1881, 24,974.

d. Average number of persons in each house at Census, 4.9.

ZYMOTIC DISEASES.

The deaths registered in 1884 from the miasmatic order of the zymotic class of diseases numbered 621, and comprised 15 deaths from Erysipelas, 15 from Croup, 4 from Puerperal Fever, 14 from Rheumatism, 2 from Remittent Fever, together with 557 fatal cases returned under the seven principal zymotic diseases. The total deaths were equal to 21 per cent. of the deaths from all causes, and to an annual rate of 4.8 per 1000 persons living. The 557 deaths from the seven zymotic diseases represented 19 per cent. of the deaths from all other causes. The zymotic death rate for the year under notice was equal to 4.3 per 1000, against 3.2 and 2.5 in 1882 and 1883 respectively.

From Table VI. it will be seen that, with the exception of Scarlet Fever and Small Pox, the deaths from the other zymotic diseases were more numerous last year than in 1883. The fatality from Diarrhœa was exceptionally high, and a comparison of the diarrhœal returns for the 12 previous years shews that on only one occasion during this interval were the deaths more numerous, viz., in the year 1880.

The ages and sex of the deaths ascribed to the principal Zymotic diseases were as follow :—

Under 1 year	...	...	322, viz.—Males, 175...Females, 147
From 1 to 5 years	...	179	„ 95 „ 84
5 years and upwards	56	„ 26	„ 30
All ages, both sexes...	557	„ 296	„ 261

From the above analysis of the ages it will be observed that 57.8 per cent. of the deaths from Zymotic causes were infants under one year, and 32 per cent. were children between one and five years of age; thus 89.8 per cent. of the deaths from preventable causes occurred among children under five years. Among persons whose ages extended upwards from 5 to over 80 years, the percentage rate was only 10.

The following is a statement of the ward distribution of the deaths last year from the special Zymotic diseases, compared with the corresponding returns in 1883. In St. Martin's Ward only 2 deaths occurred from Diarrhœa, and no further fatality was recorded from other Zymotics; in North St. Margaret's there were 64 deaths last year against 48 in the preceding year; in Middle St. Margaret's there were

TABLE VI.

SHIEWING THE DEATHS FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES IN THE TWELVE YEARS, 1872 TO 1883, AND IN THE YEAR 1884.

DISEASE.	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	Proportion of Deaths to 1000 Deaths in 1884.
Small Pox ...	346	2	0	0	0	6	1	0	0	2	5	3	0	0
Measles ...	36	62	24	49	50	40	45	72	166	7	74	15	57	19.41
Scarlet Fever ...	5	6	18	175	173	33	12	105	119	184	72	91	63	21.45
Diphtheria ...	2	7	8	7	10	9	5	11	23	11	5	6	11	3.74
Whooping Cough ...	51	64	43	91	33	65	82	61	27	122	19	59	66	22.47
Fever ...	64	55	48	64	43	20	31	21	46	29	19	10	16	5.45
Diarrhoea ...	305	314	257	308	263	185	302	88	398	193	214	148	344	117.13
Total ...	829	512	398	694	572	358	478	358	779	548	408	332	557	189.65

TABLE VII.

WARD DISTRIBUTION OF DEATHS FROM ZYMOTIC DISEASES, 1884.

WARDS.	Small Pox.	Measles	Scarlet Fever.	Whooping Cough.	Diphtheria.	Fever.	Diarrhoea.	Total Deaths.
Saint Martin's Ward	2	2
North Margaret's	...	9	2	10	1	2	40	64
Middle Margaret's	...	27	21	29	2	2	129	210
East Margaret's	...	11	12	10	5	5	78	121
East Mary's	...	1	3	3	...	...	14	21
West Mary's	...	6	6	7	3	6†	49	77
All Saints'	...	3	3	7	...	1	32	46
Total Deaths	...	57	47*	66	11	16	344	541

* This number does not include the Deaths in the Fever Hospital. † Includes the Deaths of town patients in the Infirmary.

210 deaths against 114 ; in East St. Margaret's, 121 deaths against 66 ; East St. Mary's, 21 deaths against 12 ; West St. Mary's, 77 deaths against 52 ; and All Saints', 46 deaths against 39. The increase in the deaths was most marked in Middle and East St. Margaret's, and in West Saint Mary's Wards.

MEASLES.

The deaths recorded last year from this disease amounted to 57, and of these, no fewer than 53 occurred in the fourth quarter. The disease spread very rapidly indeed towards the close of the year which, enquiries made at the time shewed, was largely dependent upon the attendances at school of children from infected houses. At the request of the Sanitary Committee I drew up, in circular form, a short description of the more prominent symptoms and dangers attending Measles, with the precautions to be used for limiting its spread. About 15,000 of these circulars were printed and, through the kind assistance of the School Board, a copy was sent to almost every house in the town having children of school age. I have every reason to believe that the wide distribution of these circulars among the people had a most beneficial effect, and gave a distinct check to the spread of the disease.

From conversations I had at this time with several of the head teachers of the Board Schools, I learned that to each head teacher the School Board Authorities furnish a copy of "Regulations for preventing the spread of infectious diseases" in schools. The following is a copy of these regulations.

RULES

Regarding Absence from School on account of Infectious Diseases.

I.—No Child is allowed to attend School if he or she has any of the following diseases, namely:—Small Pox, Scarlet Fever or Scarlatina, Whooping Cough, Chicken Pox, Measles, Mumps, Ringworm, or Itch.

II.—A Child who has been ill with Small Pox, Scarlet Fever or Scarlatina, may not return to school unless a certificate is brought, signed by the Sanitary Inspector, stating that the child is well, and that the clothes have been properly disinfected.

III.—A Child living in a house where there is either Small Pox, Scarlet Fever or Scarlatina, will not be allowed to attend School unless a certificate is brought from the Sanitary Inspector, declaring it to be safe for him or her to do so. In any case of continued absence from School on the plea of illness or fear of infection, the Head Teacher may obtain a Certificate from the Sanitary Inspector through the visitor if there is reason to believe the child ought to be at School.

IV.—A Child who has been ill with Whooping Cough may not return to School for at least five weeks from the time of falling ill.

V.—A Child who has been ill with Chicken Pox, Measles, or Mumps, may not return to School for at least two weeks.

VI.—A Child who has been away from School with Ringworm, or Itch, must bring a certificate to the effect that the disease is cured.

VII.—A Master or Mistress, if not satisfied in any case, may refuse to admit a Child back to School without a Medical Certificate, stating that there will be no risk to other Children by doing so.

The following considerations have led me to think that a much better plan than that now in use might be adopted for limiting the spread of infectious diseases in Schools.

1st.—Children suffering from Chicken Pox, Ringworm, or Itch, do not as a rule suffer from much bodily discomfort. In hundreds of cases children with these diseases regularly attend School, and the discovery of their ailments by the teachers is very frequently purely accidental. In the meantime the disease may have gained considerable prevalence in the School.

2nd.—A child may have contracted Whooping Cough for a considerable time before the distinctive “Whoop” discloses the true nature of his complaint. For many days prior to the supervention of this symptom the child exhales large quantities of the specific poison and many of his school-mates become infected.

3rd.—It is a well-known fact that in Measles large quantities of the poison are given off for 2 or 3 days from a child so affected before any rash appears on his body to indicate the nature of the illness. Children in this state frequently attend school and so spread the disease. The same may be said of many cases of mumps.

4th.—In very slight cases of Scarlet Fever and more particularly

when the rash is scanty in amount, the real nature of the disease may entirely escape the parents' notice, and the passing indisposition from which the child is seen to be suffering may be assigned to some trivial derangement of the stomach, &c. In these cases the children continue their daily attendance at school and, as may well be imagined, much evil results.

From the larger school attendances which have followed the adoption of "Compulsory education," the risks to school children of catching infection of every kind have been greatly multiplied, and for several years past I have held the opinion that to minimise the increase of dangers to health it is absolutely requisite that a fuller knowledge than heretofore of the nature of infectious disease be imparted to the people. The dangers to life likely to arise in the course of the several infectious diseases should be plainly laid before them; the initial symptoms distinguishing each complaint should be fully described and a list of precautions for use in each special case should afterwards be given. Any information short of the above will not suffice for the purpose in view. The public should be taught to recognize infectious disease at the earliest moment possible after invasion sets in, as precautions taken at this period would be attended with great success and yield the maximum of benefit. It is certainly of much less value when the information given is confined to a bare description of precautions to be taken when the disease has already made considerable progress.

At the present moment the greatest ignorance prevails among parents as to the special landmarks of each infectious disease affecting childhood, and under these circumstances it will be obvious that any measures undertaken with the object of diffusing such knowledge could not fail to be followed with beneficial results. I think that the Health Authority, and not the School Board, should undertake the duty of supplying gratis the required information to every parent in their district who may have children attending school.

I have appended a copy of the circular lately issued by the Sanitary Committee of this town during the epidemic of measles as an example of the kind of information to be supplied for each disease and which I deem indispensable to effect any good.

MEASLES. AND PRECAUTIONS FOR ITS PREVENTION.

“Measles is one of the most contagious or ‘catching’ of diseases, and wherever it prevails it is of the first importance that parents should, as early as possible, be able to recognize the true character of the malady from which their child suffers, since the contagiousness of measles is very active during the first or second day after sickness sets in. The contagion or poison, at this period, passes off abundantly in the breath and sweat of the patient, and the surrounding air soon becomes greatly contaminated with it and is rendered highly infectious. This early development and escape of the poison, for some days before the exact nature of the illness is revealed by the appearance of any rash on the skin, makes it extremely difficult to effectually arrest its spread among families or in schools.

Should a child, after being feverish and restless for a day or two, show signs of tenderness and redness of the eyes, with a watery discharge from both the eyes and nostrils, accompanied with sneezing and occasional cough, it would be advisable to separate him at once from the other children in the house and place him in a comfortably warm room. If the case turn out to be measles, a rash of red spots, like flea-bites, will, on the fourth day of the illness, begin to appear about the child’s forehead, and the eruption soon spreads over the rest of the face. On the following morning the rash will be visible on the sides of the neck and breast, and spreading towards evening over the body, it will at last show itself upon the arms and legs.

Numerous and grave are the dangers which threaten a little invalid so affected, for if the child be not properly treated and carefully nursed, it may suffer from acute inflammation of the throat or of the lungs; convulsions or diarrhœa also may come on, and from any of these complications the child may, after much suffering, lose its life. A fatal issue of this kind is, unfortunately, only too common during an epidemic of measles. When once a child is suspected to be suffering from the disease, many of the dangers above described may be much lessened or altogether avoided if, instead of undertaking the treatment of the case themselves, the parents seek the advice of a medical man with the least possible delay.

When Measles breaks out in a family the following precautions should be immediately taken to prevent its spread :

1st.—A medical man should, I repeat, at once be sent for. No mother should ever undertake the sole treatment of her child however slight the attack of measles may appear to be.

2nd.—Meanwhile the sick child should be placed in an upper room, where an agreeably warm, but not excessive, temperature is to be maintained throughout the day and night.

3rd.—The room should be cleared of carpets and all woollen draperies not absolutely required in the nursing of the sick child.

4th.—No persons who have not previously suffered from Measles should be allowed into the sick room.

5th.—For a period of three weeks after the disease has quite disappeared from the household, none of the healthy children should be sent to any School, public or private, or be allowed to play with the children from neighbouring houses. This rule should also be strictly adhered to, in regard to their attendance at Sunday Schools.

6th.—In rooms where children are lying ill with the disease everything should be kept as pure and clean as possible. The air of such rooms should be regularly freshened during the day by opening the windows, after carefully covering the patient with the bedclothes, for intervals of about ten minutes. This opening of the windows should be done at least three or four times in the course of each day.

7th.—A pail or other large vessel containing water, into which has been poured Condry's fluid, or a solution of chloride of lime or carbolic acid, *should be kept in the room*, and into this all pocket-handkerchiefs, used towels, or any pieces of linen soiled by the discharges from the nose, mouth, or otherwise, should be placed. These things should be daily taken away and purified by boiling or washing them with carbolic soap.

8th.—All cups, plates, and other food utensils used in the sick-room should be scrupulously cleansed in boiling water containing some disinfectant before being used by other members of the family. The hands of the nurse should also be frequently cleansed by washing in water impregnated with some disinfectant fluid."

The instructions and precautions for most of the diseases mentioned in the Leicester School "Regulations" would of course occupy much less space than the above, and the information as to all the contagious diseases could be issued either in book or circular form. With the

wider experience which each year brings as to the various ways in which the ignorance of the public on the points above referred to ministers to the spread and maintenance of infectious diseases, I think that the adoption of some such plan as I have here sketched out will soon be imperatively incumbent upon all Health Authorities throughout the country.

SMALL POX.

No fatal case of this disease was recorded last year, but three distinct outbreaks were reported in the town and neighbourhood, and in each instance the infection was conveyed from London. Owing to the immediate removal of all the inmates of each house where the disease appeared to the Fever Hospital at Freake's Ground, together with the thorough disinfection and lime washing of the infected houses, the further spread of the disease was arrested.

The first occasion on which it appeared was on the 11th April, in a house at Wanlip. Three persons, all inmates of the same house, were attacked. The second appearance was on the 22nd August, in a house off King Richard's Road, and here two persons contracted the disease. It was again imported on the 28th November, by a young man living in the neighbourhood of High Cross Street, and in this instance the disease did not extend to any other member of the family. During the last eight years there have been no fewer than twenty importations of Small Pox into the town and its immediate neighbourhood; the disease has, however, always been stamped out owing to the fact that the Health Committee have always succeeded in promptly removing to Hospital, not only those stricken with the malady, but also all the other inmates of each infected house.

FEVER HOSPITAL.

The number of patients received into this Institution during 1884 amounted to 365. Of these, 354 were suffering from Scarlet Fever, 6 from Small Pox, and 5 from Erysipelas. 18 of the cases proved fatal, viz.: 16 from Scarlet Fever and 2 from Erysipelas. The mortality was equal to 4.9 per cent. Compared with the Hospital returns in 1883, the admissions last year shewed a decline of 42; this

reduction does not, however, indicate any loss of the popularity which has hitherto attached to the Hospital, but is fully accounted for by the diminution in the prevalence of Scarlet Fever during the year.

SCARLET FEVER.

During 1884 the deaths from this cause amounted to 63. 47 of the cases occurred in different districts of the town, and 16 took place among the patients in the Fever Hospital. Compared with the Scarlatinal returns for previous years the deaths last year shewed a decline of 28 upon the number recorded in 1883, and were 51 below the average for the five preceding years.

In the year 1883, 797 houses were reported by the medical men of the town as having been visited with Scarlet Fever; during last year the number declined to 701. While these figures point to a considerable reduction in the number of Scarlatinal visitations during the past year, they at the same time indicate that the disease still maintained an epidemic prevalence among the people.

For the last five years Searlet Fever has continued prevalent in the town. Throughout this period the Sanitary inspectors paid repeated visits to every house where the disease was reported. Special inspections were also in each instance made of the house drainage and the domiciliary surroundings, the people were at the same time cautioned as to sending their children to school, and no effort was spared to impress upon the parents the desirability of allowing their children to be removed to the Hospital. The sustained prevalence of the malady, notwithstanding these continued efforts for its suppression, was most disheartening to all concerned, and was doubtless owing to the fact that only 50 per cent. of the parents had generally agreed to the wishes of the Health Authorities by allowing their children to be removed to the Hospital. Last year proved no exception to this rule, for out of the 701 houses certified as infected, only 354 children were removed to the Institution. Thus in 347 habitations, scattered as they were over every district in the town, the infection was retained and by its spread therefrom served to defeat in great measure the ceaseless efforts made to reduce its degree of prevalence.

These efforts are still persevered in by the Health Committee, but for their labours to be at all successful in clearing the town of this

lingering pestilence it will be absolutely necessary that a greater measure of co-operation be accorded to them in future by parents availing themselves more widely of the advantages for isolation and treatment which our Fever Hospital affords.

DIARRHŒA.

The deaths ascribed to this disease in the past year amounted to 344, against 148 recorded in 1883, and 248 the annual average for the 12 years 1872-83. Of the 344 deaths last year, 276 were those of infants under one year of age, 48 were of children from one to five years and 20 were persons over five years. The deaths were distributed over the quarterly periods of the year after the following manner: 6 were registered in the first, 9 in the second, 314 in the third, and 15 in the fourth. The summer quarter is the season to which diarrhoeal fatality is almost exclusively confined, and the annual rate for the thirteen weeks included in this period of 1884 was equal to 9.8 per 1000, against 3.9 in 1883 and 5.7 in 1882. Among the 28 large towns for which returns are now weekly supplied by the Registrar General, the places most noted for diarrhoeal mortality are Leicester, Hull, and Preston. A review of the returns of deaths from this cause for the summer quarters of the past eleven years discloses the fact that on no less than six occasions the Leicester rate was the highest on the list. This state of things is eminently unsatisfactory and it is to be hoped that some practical and unmistakeable recommendations for the mitigation of the evil may be included in the exhaustive Report which Drs. Ballard and Power have been engaged upon for several years past.

CONSTITUTIONAL DISEASES.

The forms of Constitutional diseases are arranged under two groups, the Diathetic and Tubercular. The total number of deaths registered from this class amounted to 377. The Diathetic diseases caused 63 deaths, 45 of which were due to Cancer, 16 to Dropsy, and 1 to Mortification. The fatality was here chiefly confined to adults, as only 3 out of the 63 deaths were of children under five years. The Tubercular diseases caused 314 deaths, viz., 232 from Phthisis, 29 from Tabes Mesenterica, 39 from Hydrocephalus, and 14 from Scrofula. Of the 232 deaths from Phthisis, 134 were of males and 98 of females, and

their distribution over the several wards was as follows:—1 occurred in St. Martin's, 20 in North St. Margaret's, 66 in Middle St. Margaret's, 69 in East St. Margaret's, 4 in East St. Mary's, 52 in West St. Mary's, and 20 in All Saints'. The numerous deaths recorded from Consumption in East St. Margaret's and West St. Mary's Wards depend upon the fact that the deaths in the first-named Ward include those which took place in the Union Workhouse, and to the deaths in the second are added those in the Infirmary. The deaths last year from each one of the Tubercular diseases were more than in the previous year.

LOCAL DISEASES.

In the past year the deaths referred to the various causes included in this class of diseases amounted to 1302, against 1181 recorded in the preceeding year.

(a) Of the 1302 deaths, 506 were referred to the various diseases of the Lungs, of which number 299 were caused by Bronchitis, 170 by Pneumonia, and 10 by Asthma. Of the 506 deaths above-mentioned, 261 were those of children under 5 years of age, 210 were those of persons between the ages of 5 and 65 years, and 35 were those of persons aged 65 years and upwards.

(b) The deaths from heart disease last year were 168, 79 of which were males and 89 females. The deaths from the same cause in 1883 numbered 142.

(c) The number of deaths due to various diseases of the Brain and Nervous System was 470, of which 273 were males and 197 females. The total deaths included 307 of children under 5 years. Convulsions, the fatality of which is almost wholly confined to children, caused 270 deaths. The deaths referred to the other diseases of this class were 65 from Apoplexy, 33 from Paralysis, and 10 from Epilepsy.

(d) 96 deaths resulted from diseases of the Digestive Organs; of these, 11 were caused by Peritonitis, 13 from Enteritis, 6 from Hernia; 21 were returned under "Stomach disease;" and 25 under "Liver disease." Of the total 96 deaths, 48 were those of males and 48 of females.

(e) 45 persons died of Urinary diseases, and of these, 11 were ascribed to "Bright's disease," 11 to Nephritis, and 12 to "Kidney disease." The number of deaths returned under this class in 1883 amounted to 53.

HEALTH DEPARTMENT.

SANITARY WORK.

Compared with previous years, a greatly increased amount of Sanitary Work was carried out last year under the instructions of the Health Committee. The house to house visitation of the several districts of the town was actively performed; 7715 visits were paid by the Inspectors in the course of this house visitation; 2775 special inspections and investigations were made of premises, &c., about which various complaints had been received; 4771 re-inspections were made to ascertain the progress of the work specified in the Sanitary and informal orders that were issued; 1613 visits were made to houses in which persons were reported to be suffering from infectious diseases, and in visiting such houses the Inspectors made a strict examination, not only of the houses notified as infected, but also in numerous instances extended their enquiries to other houses in the immediate neighbourhood of the infected area. Sanitary defects of a more or less serious nature were discovered in 121 of the infected houses. 218 inspections were periodically made, both by night and day, to the Common Lodging Houses, to ascertain their condition as to cleanliness, ventilation, and over-crowding, and, with few exceptions, their condition was found to be maintained at a satisfactory level.

There are 76 Slaughter Houses in the town, and all of them are registered. Last year 231 visits were paid to them to ascertain their state of cleanliness and to prevent any undue accumulations of manure and offal on the premises, and special attention was in each instance directed to the state of the drainage and house gullies. In many cases arrangements were made for the reduction or total abolition of the manure pits, and tubs were provided for the reception of the manure and offal. Many of the Slaughter House floors were repaired and gullies of proper pattern so fixed as to prevent the passage either of sewer gas into the buildings or of offal into the sewers. The sewers

were in several instances found completely blocked with collections of slaughter house refuse.

Altogether there are 45 Schools in Leicester, 17 of which are under the management of the School Board, and the remaining 28 are Voluntary. There are 10,600 children in attendance at the Board Schools and 8780 receive instruction in the Voluntary Schools. In the early part of last year the whole of the Board and Denominational Schools were inspected, and alterations and improvements were carried out in the sanitary arrangements of 14 Schools. Again at the close of the year, when measles prevailed, many of the Schools were thoroughly disinfected and cleansed.

During the year, 388 inspections were also made of the Bakehouses in the town, and special attention was given to the means provided for the drainage and ventilation of the premises.

The number of visits and inspections made by the three Inspectors in the course of last year amounted in all to 17,711. Such figures furnish the best index of the un-remitting activity these officers have shown in the discharge of their public duties.

Recognising the difficulties frequently experienced by Sanitary Inspectors in localizing nuisances arising from defective under-ground drainage, closet connections, internal soil pipes, bath and lavatory waste pipes, basement drains, &c, Mr. Allen, our chief Building and Sanitary Inspector, very wisely introduced and frequently applied the "Smoke Test" during the year. Numerous long standing and startling defects in the Sanitary arrangements of public and private buildings were revealed by its aid that could not otherwise have been localized or traced except by opening up and examining the whole of the drains and internal fittings. I look upon the apparatus as an indispensable addition to the ordinary means of detecting nuisances, and am of opinion that wherever drains are believed to pass underneath dwelling houses, or wherever there are internal soil pipes, this test should be rigorously applied, for in many cases of the sort escapes of sewer gas have been found in the basement and other portions of some of the best houses in Leicester, as well as in public buildings. Houses of the better class, and especially the older ones, are in fact more subject to the dangers of sewer gas than houses of the artizan class by reason of the defects in internal closets, soil pipes, bath and lavatory connections,

basement drains, &c. In the older houses of the artizan class the people suffer most frequently :

1.—From the *dampness* of the houses arising :

(a) From the defective yard-paving, which allows the surface water to soak into and water-log the ground around and underneath the houses :

(b) From defective sink waste-pipes, dilapidated slating and spouting, defective drains, leaky cisterns or cisterns without overflows.

2nd.—From the foul gases given off by deposits and accumulations of decomposing animal and vegetable matter in defective sink waste-pipes.

Externally these houses are subject to the same dangers as houses of the better class from defective drains, traps, and closet connections, deep wet and foul ash pits, &c.

I cannot therefore too strongly recommend the Committee to make it generally known to householders and others that they may have the sanitary arrangements of their houses tested and reported upon by applying to the sanitary office.

Whilst on this subject I may mention that the placing of the Sanitary and Building Inspectors under the supervision of one chief officer, Mr. Allen, works exceedingly well in practice. The chief inspector, acting for the Borough surveyor, keeps an account of the houses erected and pulled down in each ward, and this enables me to form a correct estimate as to the increase of population. By his knowledge also of the plans deposited, he is in a position to give the Inspectors directions as to the testing and examination of drains when they would otherwise be as it were working in the dark.

During 1884 no less than 4375 orders were sent out by the chief Inspector, acting for the Borough Surveyor, against 2066 in the previous year. These orders, as will be seen below, were chiefly for the correction of various defects found in the course of inspection and for the provision of other sanitary requirements which a maintenance of health demanded.

The following list is a summary of the orders issued last year and complied with without legal proceedings :—

	No.
To abolish manure pits and ash pits	27
To alter or repair manure pits and ash pits ...	242
To erect new ditto	12
To provide ash tubs or bins	22
To abolish privies	9
To abolish cesspools and cisterns	8
To cleanse, alter or repair cisterns	42
To fill up or cover wells	4
To substitute lead or iron waste pipes for brick shafts	1165
To relay or repair defective drains	258
To alter and ventilate closet soil pipes	40
To fix ventilating syphons	38
To fix closet hoppers and syphons	30
To fix W.C. flushing apparatus and lay on water supply	18
To repair ditto ditto ditto	14
To provide pails	14
To re-hang or provide new doors for closets ...	17
To alter or provide spouting for eaves	66
To cleanse and limewash closets and passages ...	324
To repair, alter, or rebuild closets	109
To erect new closets	32
To pave yards and passages or repair paving ...	335
To erect, alter, screen or repair urinals	168
To alter bath wastes... ..	6
To fix traps or gully gratings	634
To reset gullies or provide new gratings	130
To relay floors	79
To repair roofs	75
To repair dilapidated houses	73
To cleanse and limewash filthy houses	351
To cut off and stop drains	11
To ventilate workshops, alter chimneys, re-build walls, and miscellaneous	20
To remove animals kept in such a state as to be a nuisance	2
Total orders issued in 1884	4375
„ „ 1883	2066

During the year 1884, 1269 notices were issued by the Sanitary Inspectors for the abatement of various nuisances, &c. ; 1066 notices were sent out for the cleansing and lime-washing of filthy houses, and in 119 instances orders were sent out for the repair of dilapidated houses. Of the filthy and dilapidated houses reported on, the state of 431 was verified by my own personal inspection and formal notices were served for cleansing and lime-washing 385 filthy houses and for the repairing of 46 dilapidated ones. Numerous visits were made to various localities in the town where swine, to the number of 608, were kept. 535 of the swine were found to be so kept as to be injurious to health and orders were at once issued for their removal. 606 houses were also disinfected by fumigation with sulphur where there had been infectious diseases. During the year 40 old and insanitary dwellings have been demolished and at the present date houses of a low class are being pulled down in Bedford street and Piccadilly. The work included in the large number of notices was for the most part complied with by property-owners, thus rendering the issue of formal orders under the Public Health Act unnecessary.

The removal of ashes and night soil was satisfactorily conducted throughout the year. The following particulars as to the sanitary arrangements in the Borough at the close of 1883 shew how extensive and important this duty has become.

	Number
Water closets	12,140
Trough	9
Macfarlane's trough closets	24
Pail closets	5994
Earth „	153
Privies	310
Privy cesspools and vaults	208
Ashpits	10,474
Ashbins	127
Manure pits	26

The number of privies that were abolished during the three years, 1881—83 amounted to 289.

SEWER CLEANSING AND IMPROVEMENT WORKS.

The sewer cleansing and improvement works referred to in my previous reports have been continued during the past two years, although as far as the sewer cleansing operations are concerned, not quite on so large a scale or systematic a plan, but more as the necessity through stoppages of private drains arose for opening and examining the public sewers and cleansing thereof where they were found to be blocked and to have contributed to the stoppages referred to.

Tables A and B shew the streets and lengths of sewers which were opened out and cleansed during the years 1883 and 1884, while Table C gives the names of streets and lengths of sewers which were opened out and examined but found not to require cleansing. Advantage being taken of the openings made to bring up Inspection Shafts which shew at once the exact position of the sewer and give the means of access for future and periodical inspection without recourse to the excavated shafts. The covers of the new shafts are provided, as in the previous cases referred to in my reports, with ventilating openings. The total lengths of the sewers cleansed during the years 1883 and 1884 amounted to 4380 yards, or $2\frac{1}{2}$ miles, for which 452 shafts were excavated. On the whole of this length of sewers, in about 53 different streets, there was only one shaft giving means of access to the sewers, and that was in Cardinal Street, Abbey Lane. 29 new man-holes and 62 lamp holes have since been built on these sewers and brought up to the surface, giving an average distance apart of $47\frac{1}{2}$ yards, or 33 to the mile, which will be found to correspond with the average given in my former reports.

The length of sewers opened out and found not to require cleansing was 3078 yards or $1\frac{3}{4}$ miles; the number of shafts opened out in this case corresponding to the number of new inspection shafts built and brought up to the surface, including 4 old shafts also brought up to the surface. Again on this length of sewers in about 19 different streets there was only one existing inspection shaft. 32 new manholes and 42 lampholes have been built, so that with 4 existing shafts brought up to the surface there are now 79 inspection shafts, also with venti-

lating openings, provided on these sewers at an average distance of 39 yards apart, being equal to 45 per mile.

The total length of existing sewers dealt with in the manner described since 1881 and up to the end of 1884, and with reference to the condition, position, and depth of which full particulars are now obtained, is 25753 yards, or 14.63 miles with 529 inspection shafts, 18 of these having only been brought up to the surface and thus made accessible at the commencement of these works, although 122 brick shafts were found to exist, brought up to within 6 and 7 feet of the surface and covered over with slabs.

On Table D will be found the length of new foul water sewers carried out in 1883-84 in extension of existing sewers or in replacement thereof on account of their dilapidated or other conditions rendering this necessary. The same Table also shews the lengths of new storm sewers completed during the same period, chiefly in completion of the Highfields and Granby Street districts. The lengths of sewers thus completed are :—

	Yards.
Foul water sewer extension and reconstruction ...	966
Storm water sewers ...	10,645
	<hr/>
Yards ...	11,611

Making with those previously reported, 2611 yards of new Foul water sewers and 17,686 yards of new Storm sewers; or in other words, a total of 20,297 yards, or 11.53 miles of sewers carried out since 1881.

A new and important district main sewer is now in course of construction at Dane Hills of about a mile in length, which will afford the means of drainage to a large number of houses built off the Hinckley Road, and the drainage from which at present pollutes the brook which crosses the Fosse road and the Railway into the new Flood course opposite the new Weir near to Mr. Hitchcock's Mill.

UNWHOLESOME FOOD.

In the following statement are given the quantities and kinds of food condemned as unsound and seized by the Food Inspector, Mr. Wand, during the year 1884.

	No.	Tons.	Cwt.	Qrs.	lbs.
Meat ...	...	4	3	0	6
Fish ...	...	15	5	2	16
Fruit ...	...	4	3	2	4
Rabbits	... 374				
Geese ...	... 84				
Partridges	... 60				
Fowls ...	... 10				

From the above list it will be seen that of those articles of food the weight of which was ascertained, no less a quantity than 23 tons 12cwt. and 26lbs. was unsound. As the public health is affected in no small degree by the manner in which the duty of food inspection is carried out, it must be admitted that Mr. Wand by these extensive seizures of unwholesome food performed a service to the public, the importance of which it would be simply impossible to over-estimate. The greater portion of the condemned food was destroyed at the request of Mr. Wand, but four prosecutions were instituted. A conviction was secured in each case and fines, ranging from £3 to £20, were imposed.

ADULTERATION OF FOOD.

The articles of food submitted during 1884 to the Borough Analyst for examination were as follows :—

Kind.	No. of samples collected.	Pure.	Adulterated.
Butter	.. 18	18	
Preserves	... 8	8	
Milk	... 31	29	... 2
Bread	... 16	16	
Spirits	... 9	7	... 2
Vinegar	... 8	8	
Lard	... 6	6	

The percentage of adulteration (4·1) was very small, and indicated that the general character of the articles was satisfactory. Two samples of milk were found to be impoverished, one sample containing 7 % of added water and the other having been deprived of 25 % of its cream. Two prosecutions were instituted against the vendors and a fine of 20/- was imposed upon one of them. The two samples of spirits were found to have been reduced by the addition of water

considerably below the fixed standard, and one of the publicans had sought to restore the piquancy of the spirit by adding some sulphuric acid. Both publicans were summoned before the Magistrates, and one was fined £3 3s. and costs and had his licence endorsed, the other was fined 20/- and costs.

WELL WATERS.

The number of well waters analysed in 1884 amounted to 75, against 188 in the previous year, and 151, the annual average number analysed in the nine preceding years. Of the total 75 samples examined, 53 or rather more than 70 per cent. were condemned as polluted and unfit for drinking purposes. Since the powers under which these samples of water are collected came into operation (1874), about 809 wells have been closed within the Borough, and 406 or 50·2 per cent. of these closures were effected during the last three years. At the present time it is calculated that there are upwards of 1200 houses still deriving their water supply from surface wells.

I have the honour to remain, Gentlemen,

Yours obediently,

WILLIAM JOHNSTON.

Leicester, 7th March, 1885.

APPENDIX

TO THE

REPORT OF THE MEDICAL OFFICER OF HEALTH,
1884.

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TABLE A.

Branch Sewers cleansed and provided with ventilated Inspection Shafts in various parts of the town from 1st January, 1883 to 31st December, 1884.

Description.	Length.		Size of Sewer.	Average Depth.	Minimum Depth.	Maximum Depth.	Old Brick Shafts.	New Manholes.	New L. H.	No. of Shafts Excavated.
	ft.	ins.	ins.	ft. ins.	ft. ins.	ft. ins.				
1883.										
Belgrave Gate ...	350	0	$\left\{ \begin{array}{l} 16\frac{1}{2} \\ \text{to} \\ 13\frac{1}{2} \end{array} \right\}$	11 7	10 11	11 10	..	1	2	11
Bedford Street ...	157	6	$\left\{ \begin{array}{l} 16\frac{1}{2} \\ \text{to} \\ 13\frac{1}{2} \end{array} \right\}$	9 7	9 6	9 8	...	1	1	6
Mansfield Street ...	105	0	$\left\{ \begin{array}{l} 18 \\ \text{to} \\ 14\frac{3}{4} \end{array} \right\}$	3 0	2 10	3 3	...	...	...	6
Bedford Street ..	102	3	$\left\{ \begin{array}{l} 15\frac{1}{2} \\ \text{to} \\ 13\frac{1}{2} \end{array} \right\}$	9 8	9 7	9 10	...	...	1	4
Cardinal Street ...	363	3	$\left\{ \begin{array}{l} 15\frac{1}{2} \text{ B} \\ \text{to} \\ 9 \text{ P} \end{array} \right\}$	7 0	6 4	11 9	1	1	3	16
Bedford Street ...	214	6	$\left\{ \begin{array}{l} 15\frac{1}{2} \\ \text{to} \\ 14\frac{1}{2} \end{array} \right\}$	9 6	9 2	9 10	...	1	1	8
Bow Street ...	68	0	$\left\{ \begin{array}{l} 12\frac{1}{2} \\ \text{to} \\ 10 \end{array} \right\}$	9 3	9 0	9 5	...	...	1	2
Leadenhall Street ...	237	6	$\left\{ \begin{array}{l} 15\frac{1}{2} \\ \text{to} \\ 14\frac{3}{4} \end{array} \right\}$	5 4	4 4	6 6	...	1	2	8
Crab Street ...	473	0	$\left\{ \begin{array}{l} 16\frac{1}{2} \\ \text{to} \\ 12\frac{1}{2} \end{array} \right\}$	10 2	9 5	10 8	...	1	3	16
Barwell Street ...	99	3	$\left\{ \begin{array}{l} 15\frac{1}{2} \\ \text{to} \\ 11\frac{1}{4} \end{array} \right\}$	10 2	8 6	10 8	...	...	2	6
Hill Street ...	84	6	$\left\{ \begin{array}{l} 16 \\ \text{to} \\ 13\frac{3}{4} \end{array} \right\}$	11 4	10 6	12 1	...	1	...	3
Deacon Street ...	173	0	$\left\{ \begin{array}{l} 15 \\ \text{to} \\ 13\frac{3}{4} \end{array} \right\}$	6 4	5 3	6 10	...	...	...	9
Bedford Street ...	286	0	$\left\{ \begin{array}{l} 15 \\ \text{to} \\ 13\frac{1}{2} \end{array} \right\}$	10 8	10 6	10 9	...	1	1	8
Lee Street ...	430	0	$\left\{ \begin{array}{l} 15\frac{1}{2} \\ \text{to} \\ 12\frac{3}{4} \end{array} \right\}$	10 6	10 3	10 10	...	...	2	13

TABLE A.

Branch Sewers cleansed and provided with ventilated Inspection Shafts in various parts of the town from 1st January, 1883 to Dec., 1884 (*continued*).

Description.	Length.	Size of Sewer.	Average Depth.	Minimum Depth.	Maximum Depth.	Old Brick Shafts.	New Manholes.	New L. H.	No. of Shafts Excavated.
	ft. ins.	ins.	ft. ins.	ft. ins.	ft. ins.				
1883.									
Lee Street ...	51 0	$\left\{ \begin{array}{l} 16 \\ \text{to} \\ 14\frac{1}{2} \end{array} \right\}$	10 7	10 6	10 7	...	1	...	3
Baker Street ...	108 6	$\left\{ \begin{array}{l} 16\frac{3}{4} \\ \text{to} \\ 11 \end{array} \right\}$	3 11	2 5	4 11	...	...	...	8
Slawson Street ...	30 0	$\left\{ \begin{array}{l} 15 \\ \text{to} \\ 14 \end{array} \right\}$	10 2	9 11	10 4	...	...	1	2
Royal East Street ...	253 6	$\left\{ \begin{array}{l} 15 \\ \text{to} \\ 14 \end{array} \right\}$	10 9	9 8	11 9	...	1	2	7
Nelson Street ...	446 0	$\left\{ \begin{array}{l} 15 \\ \text{to} \\ 14\frac{3}{4} \end{array} \right\}$	6 0	5 0	6 11	...	1	3	22
Royal East Street ...	285 3	$\left\{ \begin{array}{l} 14\frac{3}{4} \\ \text{to} \\ 12 \text{ P} \end{array} \right\}$	10 4	9 3	11 3	...	1	3	9
Clara Street ...	235 0	$\left\{ \begin{array}{l} 16\frac{1}{2} \\ \text{to} \\ 12 \end{array} \right\}$	9 5	9 3	9 7	...	...	...	5
Laxton Street ...	24 0	$\left\{ \begin{array}{l} 15 \\ \text{to} \\ 12\frac{1}{2} \end{array} \right\}$	9 0	9 0	9 0	...	...	1	1
Brown Street...	46 6	$\left\{ \begin{array}{l} 15\frac{1}{2} \\ \text{to} \\ 17 \end{array} \right\}$	11 0	11 0	11 0	...	...	...	2
Sussex Street ...	250 0	$\left\{ \begin{array}{l} 17 \\ \text{to} \\ 14\frac{1}{2} \end{array} \right\}$	9 7	9 5	9 9	...	1	1	9
Queen Street ...	176 0	$\left\{ \begin{array}{l} 14\frac{3}{4} \\ \text{to} \\ 14 \end{array} \right\}$	8 7	8 0	9 0	...	...	1	6
Midland Street ...	140 7	15 to 12	10 6	10 4	10 7 $\frac{1}{2}$	...	...	1	6
Havelock Street ...	471 0	15	6 8	6 4	6 11	...	3	2	16
Blue Boar Lane ...	97 0	18 to 12	3 1	2 10	3 5	...	...	...	8
Marble Street ...	26 5	15	10 0	9 10	10 3	...	...	...	2
Upper Charles Street	467 6	15	9 4	9 0	10 1	...	...	4	15
Northampton Street...	318 0	15	10 7	10 2	11 11	...	1	2	12
S. George's Street ...	693 4	$\left\{ \begin{array}{l} 2\text{ft } 7\frac{3}{4} \\ \text{to} \\ 1\text{ft } 4\frac{3}{4} \end{array} \right\}$	7 6	3 4	9 6	...	...	...	17
TOTAL ...	7263 4		8 9	8 2	9 5	1	17	40	266

TABLE B.

Branch Sewers cleansed and provided with Ventilated Inspection Shafts in various parts of the town from 1st January, 1883 to 31st December, 1884.

Description.	Length.	Size of Sewer.	Average Depth.	Minimum Depth.	Maximum Depth.	Old Brick Shafts.	New Manholes.	New L. H.	No. of Shafts Excavated.
1884.	ft. ins.	ft. ins.	ft. ins.	ft. ins.	ft. ins.				
Syston Street ..	62 6	1 3	7 5	7 4	7 6	...	...	...	3
Arnold Street...	201 1	15ins. to 12½	6 8	4 1	8 3	...	...	2	7
New Bridge Street ...	403 10	{ 2ft 6½×1ft 8 to 2ft 5×1ft 5 }	8 0	7 9	8 5	...	3	...	15
High Street ...	273 8	18ins. to 15	12 0	11 9	12 4	...	...	...	10
Paradise Lane ...	102 0	1 3	8 7	8 4	8 11	...	...	1	4
Pasture Lane ...	324 1	1 3	9 5	9 3	9 8	...	1	3	11
Syston Street...	115 0	1 3	7 6	7 5	7 7	...	...	...	3
Friday Street...	802 1	1 3	10 1	9 4	12 5	...	4	2	20
Outram Street ...	26 9	1 3	6 11	6 6	7 4	...	...	...	2
Lower Church Gate ..	84 6	2 0	12 0	11 4	13 0	...	...	...	2
Abbey Street ...	83 6	1 0	2 11	2 9	3 0	...	...	1	2
York Street ...	366 3	1 3	10 11	9 4	11 3	...	...	3	11
Britannia Street ..	19 6	1 1	2 3	2 1	2 4	...	...	...	2
Navigation Street ...	370 4	1 3	12 2	10 1	13 10	...	1	3	14
Abbey Gate ...	242 1	1 0	10 4	9 6	11 0	...	1	1	8
Chestnut Street ...	345 0	14ins. and 12	10 6	9 6	11 6	...	1	2	10
S. Peter's Lane ...	150 10	1 3	2 11	2 6	3 3	...	...	...	11
S. Peter's Lane ...	83 3	1 3	3 2	2 10	3 6	...	...	...	7
Leadenhall Street ...	100 9	1 3	4 8	4 4	5 0	...	...	...	3
Crafton Street ...	71 6	1 3	8 9	8 8	9 0	...	...	...	4
Humberstone Road ...	56 10	1 0	4 9	4 8	4 10	...	...	...	4
All Saints Open ...	117 3	15ins. B & 12ins. P	9 10	9 9	10 2	...	...	1	4
Burley's Lane...	79 0	1 6	3 0	2 9	3 0	...	...	...	4
Dun's Lane, across river and Field to Great Holme St. }	420 0	2ft. and 18ins.	10 4	9 2	11 8	...	...	...	10
Garvice Street ...	62 6	1 3	7 8	7 7	7 9	...	...	...	1
Alice Street ...	144 7	1 0	6 7	6 2	7 0	...	1	1	6
Magenta Street ...	50 6	1 0	6 1	6 0	6 2	...	...	1	2
Shenton Street ...	8 7	1 0	7 5	7 5	7 5	...	...	...	1
Craven Street ...	109 10	1 3	7 4	6 8	8 0	...	...	1	5
Total for 1884 ...	5877 7		7 6	7 1	8 1		12 22		186

TABLE C.

Branch Sewers opened out, examined, and provided with ventilated Inspection Shafts on cleansing operations being found to be unnecessary in various parts of the town from 1st January, 1883 to 31st December, 1884.

Description.	Length.	Size of Sewer.	Average Depth.	Minimum Depth.	Maximum Depth.	Old Brick Shafts.	New Manholes.	New L. H.	No. of Shafts Excavated.
	ft. ins.	ft. ins.	ft. ins.	ft. ins.	ft. ins.				
Brunswick Street and Humberstone Road, from Benford Street to Wimbledon Street	1612 0	1 6	10 7	9 4	11 2	...	9	5	14
Morlidge Street ...	571 0	1 3	11 4	10 10	11 8	...	2	4	6
Ann Street ...	315 6	1 3	10 6	10 0	10 10	...	...	3	3
Arthur Street ...	382 0	1 6	10 10	10 8	11 1	...	1	2	3
Burton Street ...	193 0	15in. & 12in. r	10 1	8 11	11 1	...	...	2	2
Burton Street ...	74 0	1 3	10 5	9 8	11 1	...	...	1	1
Nichols Street ...	695 0	1 3	11 3	10 7	11 9	...	2	3	5
Gower Street ...	317 6	15in. and 14in.	10 10	10 7	11 0	...	1	2	3
Navigation Street ...	300 0	1 3	12 1	11 8	12 6	...	1	1	2
King Richard's Road	901 0	18in. and 15in.	10 0	7 9	12 0	...	3	1	4
Clara Street and Noble Street ...	581 3	1 3	10 0	9 3	11 2	...	2	3	5
Dannett Street and Noble Street ...	593 0	1 3	9 10	9 0	11 2	...	2	3	5
Flora Street and Noble Street ...	528 0	1 3	9 5	8 3	12 0	...	2	3	5
Kate Street and Noble Street ...	520 10	1 3	7 10	7 4	8 6	...	2	3	5
London Road, storm sewer ...	900 0	{ 2ft 8x2ft 8 } { and 3ft }	13 0	6 0	20 6	1	2	2	5
Hanover Street and Conduit Street ...	250 0	1 3	7 0	7 0	7 0	...	2	...	2
Little Thomas Street	121 8	1 3	9 1	9 1	9 1	...	...	1	1
Syston Street...	380 0	1 3	7 8	7 3	8 5	4	1	3	4
Totals (ft. linl.) ...	9235 6		10 1	9 1	11 3	5	32	42	75

TABLE D.

LIST OF NEW FOUL SEWERS CARRIED OUT IN 1883-4.

	Feet	In.
London Road and Conduit Street, alterations - - -	60	0
Wood Street, drainage - - - - -	892	0
S. George's Street, passage out of - - - - -	225	0
Mill Hill Lane, re-modelling - - - - -	82	0
Northampton Square, connection with Upper Charles St.	44	6
Haxel Street, re-connection - - - - -	58	0
George Street, re-construction and extension - - -	466	0
Humberstone Road and Brunswick Street, re-construction	392	0
Clara Street, re-construction - - - - -	173	6
Chester Street, re-construction - - - - -	97	0
Gartree Street, re-construction - - - - -	68	10
Halford Street, extension - - - - -	68	4
Waring Street, extension - - - - -	91	3
Magenta Street, re-construction - - - - -	26	4
Mill Hill Lane, extension - - - - -	72	0
Holy Bones, extension - - - - -	82	0
Total - - - - -	2898	9

LIST OF NEW STORM SEWERS CARRIED OUT IN 1883-4.

Occupation Road - - - - -	305	0
S. James' Place - - - - -	540	0
Highfields District, remainder of contract - - -	19,775	0
Granby Street and Wellington Street districts - - -	9234	0
Groby Road - - - - -	516	3
Evington Lane - - - - -	413	0
Belgrave Road, from Abbey Park Road towards boundry -	236	0
S. George's Churchyard - - - - -	125	3
Upper New Walk - - - - -	490	0
Total - - - - -	31,934	6

SUMMARY.

Description.	Length.		Average Depth.		Minimum Depth.		Maximum Depth.		Old Brick Shafts.	New Manholes.	New L. II.	No. of Shafts Excavated.
Branch Sewers cleansed and ven- tilated, 1883 ... }	ft.	ins.	ft.	ins.	ft.	ins.	ft.	ins.				
	7263	4	8	9	8	2	9	5	1	17	40	266
Branch Sewers cleansed and ven- tilated, 1884 ... }	5877	7	7	6	7	1	8	1	...	12	22	186
Branch Sewers cleansed and ven- tilated, 1883-4 ... }	9235	6	10	1	9	1	11	3	5	32	42	75
Total ...	22,376	5	8	9	8	1	9	7	6	61	104	527
Brought forward from previous re- ports ... }	54,854	10	14	3	12	9	16	1	134	73	151	922
Grand Total (linl. ft.)	77,231	3	11	6	10	5	12	10	140	134	255	1449

WARD DISTRIBUTION OF THE DEATHS AT VARIOUS AGES DURING 1884.

WARD.	0 to 1 years.	1 to 5 years.	Over 5 years.	All Ages.
St. Martin's Ward ...	11	2	13	26
North Margaret's Ward ...	136	79	125	340
Middle Margaret's Ward ...	395	187	304	886
East Margaret's Ward ...	241	93	359	693
East Mary's Ward ...	40	12	113	165
West Mary's Ward ...	174	68	302	544
All Saints' Ward ...	136	42	137	315
	1133	483	1353	2969

WARD DISTRIBUTION OF THE DEATHS FROM DIFFERENT CLASSES OF DISEASES IN 1884.

WARD.	Phthisis.	Respira- tory Diseases.	Develop- mental Diseases.	Convul- sions.	Total.
St. Martin's Ward ...	1	3	5	3	12
North Margaret's Ward ...	19	71	47	35	172
Middle Margaret's Ward ...	61	152	129	101	443
East Margaret's Ward ...	61	99	83	53	299
East Mary's Ward ...	1	26	17	7	51
West Mary's Ward ...	19	85	55	31	220
All Saints' Ward ...	18	59	50	10	167
	216	495	386	270	1367

Streets in which deaths occurred from Zymotic Diseases during the year 1884.

DIARRHŒA.

(WEST LEICESTER.)

22, Applegate Street	1, Gill's Yard, York Street
12, Slater Street	67, Havelock Street
50, Emerald Street	12, St. Nicholas Street
14, Waring Street	28, Noble Street
16, Magazine Square	Laxton Street
6, Henshaw Street	48, Andrew Street
29, Jarrom Street	2, Pentonville
31, Warrington Street	79, All Saints' Road
69, Deacon Street	24, Blake Street
31, Walnut Street	4, Court P, Northgate Street
48, Mill Lane	6, West Holme Street
83, Asylum Street	6, The Hollow
6, Court K, Asylum Street	11, Grundon Street
44, Laxton Street	17, Carlisle Street
22, Bonner's Lane	14, Causeway Lane
8, Gas Cottages	11, All Saints' Place
45, New Bridge Street	38, Thornton Lane
17, Buttclose Lane	60, All Saints' Road
11, Little Holme Street	22, Crown Street
8, Mostyn Street	50, Gray Street
48, Gray Street	St. James' Terrace
116, Havelock Street	21, Emerald Street
8½, Grange Lane	21, Cardinal Street
62, Coventry Street	21, Town Hall Lane
43, Ruding Street	5, Court B, All Saints' Road
5, Victoria Street	16, Crystal Street
7, Leamington Street	49, New Park Street
1, Court B, Clara Street	Clara Street
1, Grange Lane	125, Noble Street
10, Catesby Street	37, Braumstone Gate
15, New Walk	20, Catesby Street
19, St. Leonard Street	26, Arundel Street

36, Jewrywall Street
 7, Court A, Higheross Street
 30, Blake Street
 12, Harding Street

42, West Street, Southfields
 19, Junior Street
 2, Chestnut street

(EAST LEICESTER.)

10, Arthur Street
 2, Abbey Street
 41, Leadenhall Street
 24, Rudkin Street
 20, Denman Street
 Fleet Street Cottages
 57, Ash Street
 54, Brunswick Street
 16, Donnington Street
 16, Royal East Street
 57, Frank Street
 6, Providence Place
 3, Nelson Square
 91, Church Gate
 11, Martin Street
 Lower Free Lane
 173, Dorset Street
 14, West Goscote Street
 35, Edwyn Street
 79, Martin Street
 8, Sheldon Street
 28, Southampton Street
 8, Donnington Street
 47, Sherrard Street
 Humberstone gate
 84, Lee Street
 1, Providence Place
 Fleet Street
 34, Curzon Street
 2, Nelson Place
 20, Navigation Street

15, Argyle Street
 London Road
 302, Syston Street
 20, Leadenhall Street
 44, Lee Street
 65, Gresham Street
 50, Abbey Street
 18, East Goscote Street
 30, Cobden Street
 Brook Street
 141, Belgrave Gate
 Court A, Fleet Street
 19, Swaffham Street
 Court A, Grosvenor Street
 75, Argyle Street
 31, Russell Street
 59, St. Saviour's Road
 33, Thomas Street
 116, Melbourne Road
 10, Rodney Street
 23, St. Savionr's Road
 8, West Goscote Street
 Court D, Humberstone Gate
 148, Argyle Street
 1, Twycross Street
 76, Lee Street
 23, Brierley Street
 4, Byron Street
 37, Oxendon Street
 8, Guilford Street
 10, Sherrard Street

St. George Street
 21, Crab Street
 54, Cranbourne Street
 18, New Road
 64, Fleet Street
 5, Royal Kent Street
 50, Grosvenor Street
 County Asylum
 County Asylum
 38, Providence Place
 43, Palmerston Street
 31, Skipworth Street
 9, Lee Street
 52, Gresham Street
 9, Chamwood Street
 3, Grafton Cottages
 122, Saint Saviour's Road
 33, Sherrard Street
 56, Dover Street
 Lower Hill Street
 35, Gartree Street
 112, Gresham Street
 11, Porter Street
 29, Skipworth Street
 3, Underhill Street
 160, Wharf Street
 17, Baker Street
 35, Mansfield Street
 53, Worthington Street
 24, Donnington Street
 74, Earl Howe Street
 11, Mount Street
 76, Rutland Street
 40, Eaton Street
 1, Shenton Street
 59, Gresham Street
 St. Stephen's Road

69, Ash Street
 11, Guilford Street
 3, Catherine Street
 157, Upper Kent Street
 16, Hampden Street
 4, Vulcan Street
 20, York Street
 8, Swaffham Street
 9, Lower Grove Street
 Wigston Street
 49, Martin Street
 69, Medway Street
 20, Myrtle Road
 59, Ash Street
 55, Syston Street
 98, Catherine Street
 Court A, Pasture Lane
 200, Argyle Street
 26, Percy Street
 20, Highfield Street
 Navigation Street
 2, Malta Cottages
 88, Russell Street
 16, Eaton Street
 77, Dorset Street
 51, Ash Street
 55, Navigation Street
 199, Syston Street
 5½, Luke Street
 129, Belgrave Gate
 14, Spinner Street
 54, Laurel Road
 5, Court D, Crab Street
 21, Lee Street
 Midland Railway Station
 26, Regent Street
 7, Basil Street

11, Lee Street
 3, Cope's Cottages
 28, Brunswick Street
 117, Wharf Street
 58, Stanley Street
 126, Stoughton Street
 28, Charlotte Street
 Calais Street
 47, Albion Street
 21, Charlotte Street
 29, Edwyn Street
 95, Cranbourne Street
 86, Guthlaxton Street
 2, Christ Church Street
 31, Birstall Street
 7, Onslow Street
 3, Foundry Square
 24, Kenyon Street
 9, Stanley Terrace
 11, Friday Street
 180, Syston Street
 Pasture Lane
 14, Pares Street
 28, Foundry Lane
 12, York Street
 36, Shenton Street
 36, Cobden Street
 6, Heanor Street
 30, Granby Street
 15, Martin Street
 110, Wharf Street
 36, William Street
 25, New Lane
 84, Bedford Street
 54, Liverpool Street
 2, Mansfield Street
 6, Garfield Street

122, Bedford Street
 7, Christow Street
 50, Skipworth Street
 46, Abbey Street
 15, Court C. Sanvey Gate
 32, York Street
 21, Providence Place
 120, Upper Conduit Street
 62, Birstall Street
 Chester Street
 2, Providence Place
 22, Hutchinson Street
 Brunswick Street
 162, Birstall Street
 13, Lee Street
 26, Rudkin Street
 47, Christow Street
 9, Stanley Terracc, Humberstone
 Road
 84, Oxendon Street
 49, Christow Street
 2, Court G, Britannia Street
 108, Charnwood Street
 65, Cranbourne Street
 26, Gravel Street
 Upper Charles Street
 32, Eaton Street
 38, Brook Street
 21, Grosvenor Street
 7, Spa Cottages, Curzon Street
 179, Belgrave Gate
 Royal East Street
 11, Newby Street
 Benford Street
 28, Porter Street
 11, Harrington Street
 6, Court A, Humberstone Gate

49, Waring Street
 153, Bedford Street
 3, Brunswick Street
 Hill Street
 34, Roslyn Street
 2, Court B, Wellington Street
 4, Court P, Sanvey Gate
 87, Leadenhall Street
 41, Waring Street
 34, Orchard Street
 85, Denman Street
 42, Brook Street
 17, Thames Street
 4, Court A, Grosvenor Street
 8, Forest Road
 273, Birstall Street
 50, Twyercross Street
 85, Gladstone Street
 83, Wheat Street
 9, Grosvenor Street

43, Mount Street
 8, New Road
 20, Onslow Street
 91, Biddulph Street
 18, Willow Bridge Street
 142, Clifton Street
 1, Court H, Britannia Street
 15, Kenyon Street
 5, Gartree Terrace
 Court D, Pasture Lane
 5, Spinner Street
 96, Wheat Street
 44, Pasture Lane
 8, Court E, Church Gate
 48, Ash Street
 73, Bartholomew Street
 32, Birstall Street
 18, Midland Street
 19, Birstall Street
 22, Bell Lane

SCARLET FEVER.

(WEST LEICESTER.)

42, Ruding Street
 83, Outram Street
 39, Deacon Street
 34, Oxford Street
 7, West Street, Braunstone Gate

22, Knighton Street
 20, Welford Road
 5, Friar's Road
 101, Andrew Street

(EAST LEICESTER.)

55, Willow Bridge Street
 50, Gladstone Street
 8, Brougham Street
 39½, East Street
 3, Kent Street
 9, Willow Street
 67, Willow Street

1, Richard Street
 1, Larch Street
 40, Peel Street
 1, Larch Street
 69, Charnwood Street
 112, Stoughton Street
 54, Waterloo Street

98A, Cobden Street
 65, Gartree Street
 82, Syston Street
 3, Court B, Britannia Street
 9, Swaffham Street
 2, Garfield Street
 120, Crafton Street
 2, Milton Street
 2, Milton Street
 17, Lead Street

17, Lead Street
 17, Lead Street
 61, Earl Howe Street
 54, Maxfield Street
 8, Lower Garden Street
 169, Argyle Street
 4, Little Brunswick Street
 57, Skipworth Street
 31, Edwyn Street
 7, Rudkin Street

MEASLES.

(WEST LEICESTER.)

36, Causeway Lane
 16, Albert Street
 36, Hazel Street

82, Catesby Street
 5, Court L, Oxford Street
 25, Friars' Causeway

(EAST LEICESTER.)

33, Burley's Lane
 151, Belgrave Gate
 Fleet Street
 111, Gresham Street
 291, Birstall Street
 29, Craven Street
 10, Benford Street
 34, Swan Street
 9, Bardolph Street
 41, Junction Road
 58, Benford Street
 2, Avon Street
 19, Gas Street
 265, Syston Street
 7, St. Saviour's Road
 47, Melton Street
 21, Elm Street
 14, Charnwood Street
 171, Upper Conduit Street
 291, Humberstone Gate

10, Milton Street
 134, Willow Street
 171, Argyle Street
 95, Syston Street
 141, Birstall Street
 Bedford Street
 13, Swaffham Street
 29, Leadenhall Street
 26, Slawson Street
 38, Curzon Street
 24, Eaton Street
 37, George Street
 16, Twyeross Street
 66, Biddulph Street
 8, Preston Street
 66, Biddulph Street
 38, Mansfield Street
 13, Birkley Street
 7, Rudkin Street
 266, Syston Street

27, Woodboy Street
225, Syston Street
181, Dorset Street

3, Harcourt Street
36, Martin Street
13, Charlotte Street

DIPHTHERIA.

(WEST LEICESTER.)

60, Outram Street
88, Jarrom Street

11, Flora Street

(EAST LEICESTER.)

113, Clipstone Street
121, Upper Conduit Street
145, London Road
29, Framland Street
44, Thames Street
4, St. James' Street

211, Humberstone Gate
168, Argyle Street
1, Diseworth Street
10, Cedar Road
28, Dryden Street

FEVER.

(WEST LEICESTER.)

Infirmery
2, Thorpe Street
6, Clinton Street
Infirmery

Infirmery
Causeway Lane
Infirmery
Infirmery

(EAST LEICESTER.)

277, Belgrave Gate
69, Guthlaxton Street
31, Lower Charles Street
Union
9, Fennell Street

62, Cranbourne Street
5, Mursell Street
4, Basil Street
2, Wood Street
24, Baker Street

WHOOPIG COUGH.

(WEST LEICESTER.)

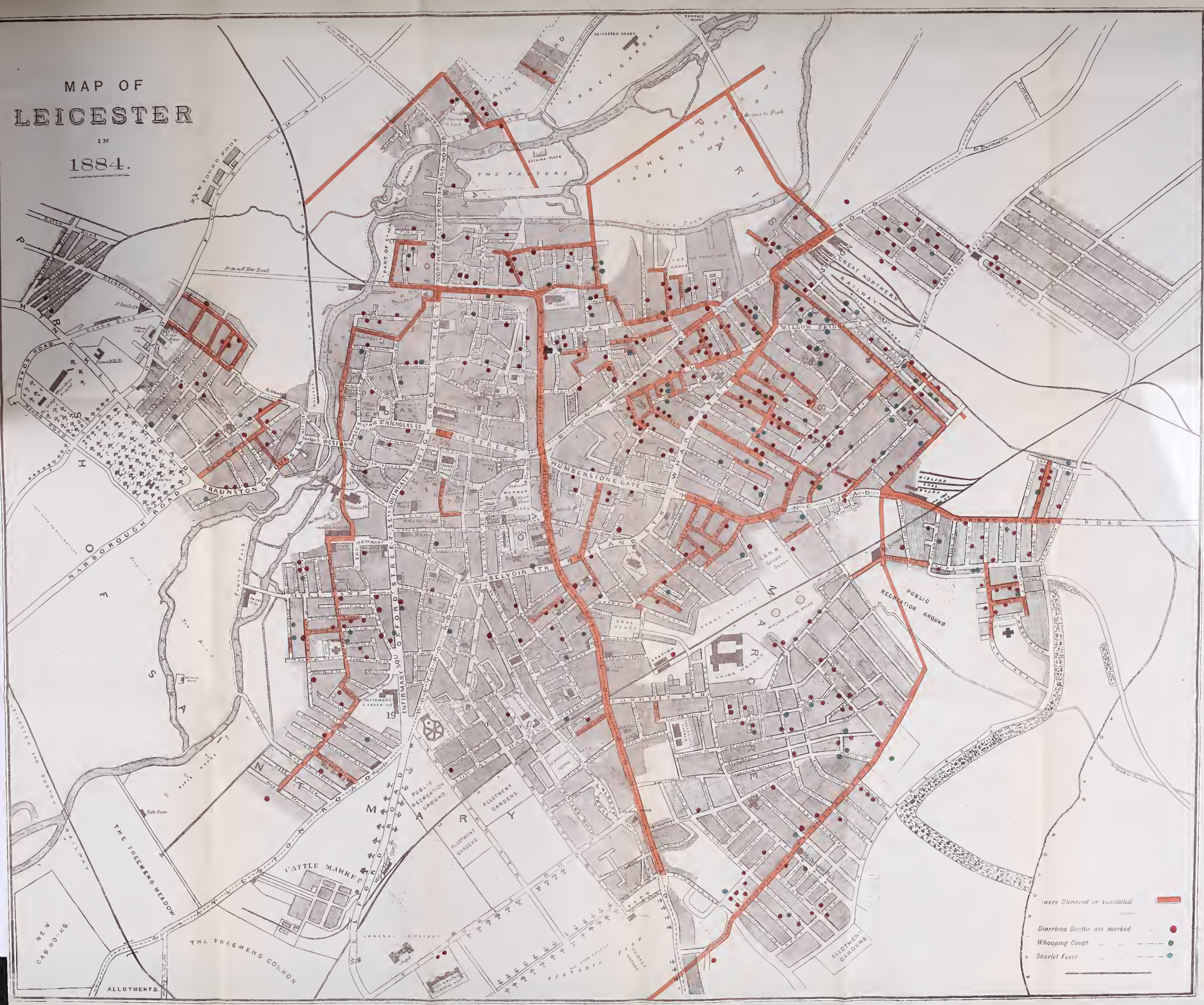
1, Henry Street
6, Warrington Street
Littleton Street
27, Leamington Street
55, Hinckley Road
12, Coventry Street
48, Gray Street

25, Asylum Street
17, Elbow Lane
21, Causeway Lane
3, Sycamore Lane
61, Oxford Street
19, Applegate Street
26, Outram Street

(EAST LEICESTER.)

101, Sanvey Gate	214, Curzon Street
Archdeacon Lane	15, Milton Street
46, Farnham Street	14, Marble Street
213, Curzon Street	19, Curzon Street
St. Peter's Road	22, Melville Street
213, Curzon Street	50, Brook Street
71, Crafton Street	71, Upper Kent Street
50, Stanley Street	2, Northampton Square
21, Watling Street	217, Syston Street
19, Watling Street	276, Birstall Street
71, Britannia Street	48, Syston Street
17A, Dryden Street	61, Bartholomew Street
1, Belvoir Street	23, Argyle Street
7, St. Margaret's Street	64, Syston Street
104, Wheat Street	122, Brook Street
20, New Road	4, Lewin's Cottages
27, Caroline Street	13, Wanlip Street
6, Calais Hill	Gartree Street
20, Watling Street	276, Birstall Street
19, Maxfield Street	Woodboy Street
76, Curzon Street	2, Grafton Place Cottages
58, Ash Street	31, Charnwood Street
35, Leadenhall Street	15, Rudkin Street
143, Upper Kent Street	13, Taylor Street
11, Diseworth Street	11, Palmerston Street

MAP OF
LEICESTER
IN
1884.



Buildings Cleaned or Ventilated

Diarrhoea Deaths are marked

Whooping Cough

Scarlet Fever



